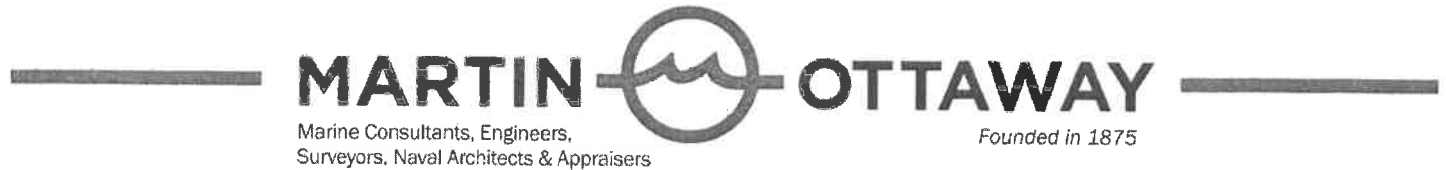


EXHIBIT 3



March 8, 2018

Mr. Olaf Aprans
Clinton & Muzyka, P.C.
88 Black Falcon Avenue, Suite 200
Boston, MA 02210

Re: M.V. "EAGLE"
Personal Injury - Ms. Amanda Arnold - September 30, 2016
Our Project No. WT-25637

Dear Mr. Aprans:

You have asked us to review documents, attend survey, and attend discussions on the subject matter in order to provide you with an opinion on the technical and operational circumstances surrounding the subject injury.

I am the President and Senior Partner of Martin & Ottaway, a marine consulting firm that has been in continuous operation since 1875. Most, but not all, of our work is related to technical, operational and financial issues in the maritime industry.

Our clients include ship owners, ship operators, ship crews, ship designers, ship builders, terminal owners, cargo owners, equipment manufacturers, underwriters, regulatory agencies, law enforcement agencies, financial institutions and attorneys.

I earned a Bachelor of Science degree in Aerospace and Ocean Engineering from Virginia Tech in 1982. I hold a Professional Engineer's License in the State of New York, am a Fellow in the Society of Naval Architects and Marine Engineers, a Fellow in the National Academy of Forensic Engineers, and a full member in the Human Factors and Ergonomics Society.

Since joining Martin & Ottaway in 1988 I have performed hundreds of maritime personal injury investigations including door injuries aboard ships.

A copy of my resume is attached to this report for further reference.

Occasionally I am asked to provide testimony under oath on my findings and a listing of my prior testimony is also attached to this report for reference.

INFORMATION:

The following information was reviewed in preparing this report:



A. Amanda Arnold

1. Deposition - Amanda Arnold
2. Plaintiff's Answers to Defendant's Interrogatories
3. Expert Reports and Rule 26(a)(2) disclosure - Pennock Law Firm
4. Exhibit 1- Plaintiff's Answers to Defendant's Interrogatories
5. Exhibits 2 through 6 - Pictures

B. James Corbett

1. Deposition - James Corbett
2. Exhibit 1 - Vessel Operations & Safety Management Manual - Woods Hole, Martha's Vineyard & Nantucket Steamship Authority
3. Exhibit 2 - Attention Purser's and OS's January 2016 & 2017
4. Exhibit 3 - M.V. Eagle Fire Boat Drill Records
5. Exhibit 4 - Defendant's Answers to Plaintiff's First Set of Interrogatories
6. Exhibit 5 - Arnold Eagle Door Maintenance Logs, All Vessels SSA Fleet Between 9/1/2006 and 10/1/2016 related to "door, hinge, bolt, hook, lock, open, close, bathroom door, interior door"
7. Exhibit 6 - 3 Eagle WOs 100116 - 090117 Doors - M.V. Eagle 10/1/16 * 9/1/17 related to "door, hinge, bolt, hook, lock, open, close, bathroom door, interior door"
8. Exhibit 7 - 4 - WOs Requested, Work Order Details - 62 pages
9. Exhibit 8 - Eagle Door WOs 100116 - 090117, Work Order Details - 5 pages
10. Exhibit 9 - M.V. Eagle - Door Numbering System
11. Exhibit 10 - Reports of Personal Injury
12. Exhibit 12 - Joiner Door & Frame Schedule

C. Charles Gifford

1. Deposition - Charles Gifford
2. Exhibit 1 - Report of Personal Injury - Amanda Arnold
3. Exhibit 2 - Reports of Personal Injury - **See James Corbett Exhibit 10**
4. Exhibit 3 - Woods Hole, Martha's Vineyard & Nantucket Steamship Authority
5. Exhibit 4 - Vessel Operations & Safety Management Manual - Woods Hole, Martha's Vineyard & Nantucket Steamship Authority - **See James Corbett Exhibit 1**
 - a. Exhibit 4.1 - Operations & Safety Management Manual - Responsibility & Authority Section
 - b. Exhibit 4.2 - Operations & Safety Management Manual - Safety Program Section
 - c. Exhibit 4.3 - Operations & Safety Management Manual - Vessel Safety Meeting Record; Safety Program Section; Health Section; Environmental Program Section; Watchstanding & Navigation Section; Engine Room Operations Section; Port Operations Section; In-port Operations Sections; Emergency Procedure Section; Training and Drills Section; Maintenance and Inspection Section; General Administration Section
 - d. Exhibit 4.4 - Operations & Safety Management Manual: General Administration Section and Appendix; In-port Operations Sections and Appendix



6. Exhibit 5 - Letter from Clinton & Muzyka with Defendant's Supplemental Answers to Plaintiff's First Set of Interrogatories
7. Exhibit 6 - M.V. Eagle Vessel Systems and Training Manual
8. Exhibit 7 - Defendant's Answers to Plaintiff's First Set of Interrogatories - **See James Corbett Exhibit 4**
9. Exhibit 8 - M.V. Eagle Work Orders from 1/1/2006 to Present
10. Exhibit 9 - Arnold Eagle Door Maintenance Logs, All Vessels SSA Fleet Between 9/1/2006 and 10/1/2016 related to "door, hinge, bolt, hook, lock, open, close, bathroom door, interior door" - **See James Corbett Exhibit 5**
11. Exhibit 10 - Work Order Details - Inspect Closers and Pass Sets on Interior Doors
12. Exhibit 11 - Safety Posters
13. Exhibit 12 - Memorandum Regarding Safety Announcements

D. Stephen F. Healy

1. Deposition - Stephen F. Healy

E. Philip Parent

1. Deposition - Phillip Parent
2. Exhibit 1 - Reports of Personal Injury - **See James Corbett Exhibit 10**

F. Francis Tallino

1. Deposition - Francis Tallino
2. Exhibit 1 - Joiner Door & Frame Schedule
3. Exhibit 2 - M.V. Eagle - Door Numbering System
4. Exhibit 3 - Arnold Eagle Door Maintenance Logs, All Vessels SSA Fleet Between 9/1/2006 and 10/1/2016 related to "door, hinge, bolt, hook, lock, open, close, bathroom door, interior door" - **See James Corbett Exhibit 5**
5. Exhibit 4 - 3 Eagle WOs 100116 - 090117 Doors - M.V. Eagle 10/1/16 * 9/1/17 related to "door, hinge, bolt, hook, lock, open, close, bathroom door, interior door" - **See James Corbett Exhibit 6**
6. Exhibit 5 - 4 - WOs Requested, Work Order Details - 62 pages - **See James Corbett Exhibit 7**
7. Exhibit 6 - Eagle Door WOs 100116 - 090117, Work Order Details - 5 pages - **See James Corbett Exhibit 8**

G. Identity of Crewmember Emails

H. Answers to Interrogatories

1. Defendant's Answers to Plaintiff's First Set of Interrogatories (executed) 08-09-17
2. Defendant's Response to Plaintiff's RPD (docs on CD) 08-09-17
3. Defendant's Supplemental Response to Request for Production No. 17 11-30-17
4. Defendant's Initial Disclosure w-docs 05-26-17
5. Defendant's Supplemental Answers to Plaintiff's First Set of Interrogatories 12.19.17

I. Corbett Standing Orders



- J. 10-27-16 Video
- K. Mason Group Videos and Photos
- L. Safety Meeting Minutes 2013-Present - M.V. Eagle Drill Records - **See James Corbett Exhibit 3**
- M. Plans, etc.
 - 1. Safety Announcements
 - a. 2006 0419
 - b. 2008 0605
 - c. 2010 0514
 - d. 2014 0415
 - e. 2016 0801
 - 2. Drawings
 - a. D269-a4-2 SFP 01&02
 - b. D269B-a10-2 door, window
 - c. D269B-a10-3 door, window
 - 3. M.V. Eagle - Certificate of Inspection
 - 4. M.V. Eagle - Door Numbering System
 - 5. M.V. Eagle Mid Life 121411 - 042212
 - 6. M.V. Eagle Pictures
 - 7. M.V. Eagle Posters
 - 8. MSC Correspondence 10.12.11
 - 9. NVIC 9-97 door and window section
 - 10. Safety Plans 1, 2 and 3
 - 11. Vessel Operations & Safety Management Manual - Woods Hole, Martha's Vineyard & Nantucket Steamship Authority - **See James Corbett Exhibit 1**
 - 12. M.V. Eagle Vessel Systems and Training Manual - **See Charles Gifford Exhibit 6**
- N. Incident Reports (Redacted) All Vessels 2011-Present, 12-15-17
- O. Work Orders
 - 1. 2017 1218 6. WO Details 4343615
 - 2. M.V. Eagle 10/1/16 * 9/1/17 related to "door, hinge, bolt, hook, lock, open, close, bathroom door, interior door", 3 Eagle WOs 100116 - 090117 Doors - **See James Corbett Exhibit 6**
 - 3. 4 - WOs Requested, Details - 62 pages - **See James Corbett Exhibit 7**
 - 4. Arnold Eagle Door Maintenance Logs, All Vessels SSA Fleet Between 9/1/2006 and 10/1/2016 related to "door, hinge, bolt, hook, lock, open, close, bathroom door, interior door" - **See James Corbett Exhibit 5**
 - 5. Eagle Door WOs 100116 - 090117, Work Order Details - 5 pages - **See James Corbett Exhibit 8**



- P. 8900 series instructions copied from SSA spare stock door closer
- Q. 8616 2009 rev. door closer downloaded from Dorma website
- R. Maritime Claims Associates report dated January 10, 2018, re door adjustment
- S. Litigation Hold correspondence dated October 11, 2016
- T. National Ski Area Association Fact Sheet: Facts About Skiing/Snowboarding Safety, October 1, 2012
- U. Photographs of Plaintiff's hands

NARRATIVE:

The following was reported and understood:

Note: Items in parentheses refer to information items listed above.

The Vessel:

The ferry "Eagle" was built at McDermott Shipbuilding in Amelia, Louisiana in 1987. (M4)

The vessel was designed by John Gilbert. (C, p22)

The capacity of the vessel is 799 passengers, 10 minimum manning crew members and 7 other crew. (M3)

The vessel is certified for Lakes, Bays and Sounds, specifically for Martha's Vineyard and Nantucket under reasonable conditions. (M3)

The vessel operates between the mainland and Nantucket and the run takes about 2 hours and 15 minutes.

As far as passengers are concerned, the vessel essentially has three decks; the car deck (main deck), the enclosed passenger deck (deck 2), and the open passenger deck (deck 3). (M10)

The vessel has bow and stern doors and is a single-ended vessel.

The vessel only has one public ladies' room (women's head) and one public men's room (men's head). (B, p130)

The heads are positioned on the enclosed passenger deck. (Deck 02) (M10)

The heads are fitted within the central core on deck 2. (M10)

From bow to stern, the central core on deck 2 contains the Purser's office/first aid station, the men's head, the women's head, and the concession stand. (M10)



Fore and aft passages on each side of the central core allow fore and aft passenger movement. (M10)

The head main access doors are located on the starboard side and open into the starboard side passage. (M10)

The head main access doors are fitted with a Dorma door closer. (A3 and M10)

The Dorma door closer on the women's head was reportedly installed in 2011 (B, exhibit 12) and is a model 8616. This work was performed at Thames River Shipyard (C, p110)

The women's head door is numbered 02-11. (B, exhibit 9)

Ms. Amanda J. Arnold:

Ms. Amanda J. Arnold was born on 18 November 1984. (A, p6)

Ms. Arnold uses glasses for distance viewing but does not need to wear them, except to read at a distance. (A, p11)

Ms. Arnold presently lives in Manhattan. (A, p6)

Ms. Arnold manages a bar. (A, p15)

Capt. Charles Gifford:

Capt. Gifford is the Port Captain for the Steamship Authority. (C, p6)

Capt. Gifford has prior experience with ocean going vessels such as tankers. (C, p18)

He has been with the Steamship Authority since about 2003. (C, p17)

Captain Gifford performs weekly inspections of the vessel. (B, p22)

Mr. Carl Walker:

Mr. Carl Walker is the director of maintenance and engineering at the Steamship Authority. (C, p78)

Mr. Phillip Parent:

Mr. Parent is the director of human resources at the Steamship Authority. He has worked for them in that capacity since 1985. (E, p5)

His responsibilities include training dealing with public service. (E, p7)

The injury reports are created and kept, including the ability to study it, to see if something can be done for it not to happen in the future. (E, p17)

Mr. Parent reviews the reports. (E, p19)

**Capt. James J. Corbett:**

Captain Corbett is the Senior Captain of the Eagle. (B, p6)

He became Captain with the Steamship Authority in 1988. (B, p7)

He became Captain of the Eagle in 2010. (B, p7)

Captain Corbett notes that safety is priority 1 for him and his crew. (B, p11)

Captain Corbett was not aboard when the accident happened. (B, p12)

Captain Corbett was told about the accident by a crew member after he returned aboard the vessel. (B, p16)

Captain Corbett performs normal rounds and did not see anything wrong with the women's head door. (B, p14)

After each trip the crew also makes a sweep and the OS and the purser would be going through the women's head door. (B, p90)

There is no timing standard for the door, but they know it when they see it if a door closes too slowly or too fast. (B, p92)

Captain Corbett notes that if there is a problem with a door during his inspection at every trip he reports it. (B, p31)

When Captain Corbett inspects a door, he watches it open and close; and if it seems too fast or too slow, he puts in a work order to have it adjusted. (B, p79) Capt. Corbett's work order ID is 1814. (B, p180)

Mr. Tallino performs the door closer adjustment. (B, p81)

Captain Corbett generally calls Mr. Tallino first and then makes a Maximo work order entry. (B, p84)

Mr. Tallino makes a report when he has finished the work. (B, p85)

Captain Corbett suggested that the doors be replaced with lighter doors, but he never received complaints about the heaviness of the doors. (B, p18) He mentioned this to Captain Gifford. (B, p22)

Captain Corbett discusses maintenance issues with Capt. Gifford during weekly inspections. (B, p26)

Work orders are discussed weekly when the vessel goes into maintenance in Fairhaven for annual maintenance. (B, p29)

**Mr. Stephen Healy:**

Mr. Stephen Healy was the purser aboard the vessel. (D, p7)

Mr. Healy informs the Senior Captain at any one time when a door is not closing properly. (D, p16) If a door closes too fast, he informs the Senior Captain. (D, p17)

They make an announcement about being cautious when using exterior doors. (D, p23)

Mr. Francis Tallino:

Mr. Tallino has been with the SSA maintenance department as a carpenter since 2011. (F5)

If a work order came to him to fix a door, he would work on it. If somebody else got the work order, he would not know about it. (F, p12)

He checks the door by opening the door and seeing if the door closer keeps the door at a pace and shuts the door, doesn't slam. (F, p16)

If it is not working right, he would adjust it or replace it. (F, p17)

He can see when a door is too fast in closing but does not measure it. (F, p18)

Mr. Tallino has read the instructions in the box to install a Dorma door closer. (F, p33). The adjustment directions are in the instructions. (F, 36) He is not aware of a Dorma manual. (F, 35)¹

Mr. Tallino does not enter information in the Maximo system. He receives Maximo work orders, fixes the problem, and goes to the next problem. (F, p50) At the end of the day he fills in a worksheet and he hands it to his supervisor, Greg Endicott. (F, p51)

Mr. Tallino's employee ID number is 5734. (F, p57)

Safety Approach:

The Steamship Authority has a corporate safety committee that is chaired by Mr. Parent and includes the director of operations, the director of engineering and maintenance, the port captain and the parking lot manager, and they try to meet monthly. (E, p21-23)

Mr. Parent reviews the injury reports (around five per year for personal injuries) and decides whether to hand them on to the appropriate safety committee member. (E, p27)

The Steamship Authority Safety Management Manual was prepared in 1997 and is used as a guideline aboard the vessel. (B, p39)

There are also safety memos and specific equipment manuals. (B, p41)

¹ There is no such thing.



The vessel safety committee is whoever is on watch, and they provide vessel feedback to the management safety committee. (B, p61)

The committee is supposed to meet once a month, but usually meets once a week (B, p64, C, p69) and issues monthly security minutes to the company security officer.

The minutes are kept in the Safety Logbook. (B, p65)

The guideline indicates that recent injuries should be discussed at the safety meetings. (B, p71)

A recent example of a committee recommendation was to improve the rescue boat brake system. (B, p63)

The Steamship Authority's position is that passenger safety is everybody's duty. (C, p18)

The Purser is the person who reports door closer problems to the Master and who receives door closer problem notifications from the other deck crew. (C, p121)

Capt. Corbett has standing orders for the crew to report problems to him and then he puts in work orders. (B, p45)

The work orders are prepared in the Maximo system. (B, p58) This system has been phased in over the last 10 years. It covers all Steamship Authority shore based and floating equipment and facilities. (C, p139)

Work order and repair issues, particularly door issues, are generally driven by the shipboard personnel. (C, p9)

Only the Senior Captain and the Senior Chief Engineer enter work orders. Other Captains and Chief Engineers call maintenance with requests and maintenance will prepare a work order. (B, p97)

There are minor repairs that may be made aboard without a Maximo work order, including door closer adjustments. (C, p124-p130)

There are Master turnover notes that provide communication between Masters when they take over from each other. Capt. Gifford reviews the Master turnover notes on a regular basis. Injuries would be recorded as a check mark. (C, p91, 93, 94)

Maintenance (shore based) has instructions not to perform work without a Maximo work order. (B, p112)

Some repairs are collected for the annual maintenance period. (B, p58)

Door closures are a continuous concern. (C, p32)

The vessel underwent its last USCG dry dock inspection on February 29, 2016. (M3)

On March 18, 2016, the vessel's COI was renewed. (M3)



There was a general door closer inspection work order in January 2016. This occurred during the vessel's annual maintenance period. (B, p183)

There is a January 2016 standing order to the Purser and OS's to report any broken or damaged items to the Captain immediately "especially broken door handles and closures. Do not delay in reporting any repair issues to the captain." (B, p48) This order is posted in the Purser's office. (B, p50)

Each door has a door number. (B, p114)

There is an onboard personal injury reporting system that collects and records injuries that are reported aboard.

Injuries more than a Band-Aid require a 2692 that is prepared by the Master and issued to the USCG within 48 hours. (B, p55)

Prior Incidents:

Accident reports are routed through the human resources director, Mr. Parent, and some are routed to Capt. Gifford for further evaluation. (C, p43)

The Steamship Authority provided a total of 20 door injury reports on its fleet between 2011 and the end of 2017. (N)

Of these incidents, eight occurred on the "Eagle" and the remainder on other vessels in the fleet.

Of the "Eagle" incidents, the following is noted:

1. On October 6, 2011, there was a door incident where a child had a door slammed on a thumb in an exterior door but did not require a 2692. High wind was listed as a factor.
2. On November 20, 2011, a woman injured her right thumb with minor bleeding (possibly broken) when entering the women's head. Rough conditions were noted.
3. On June 29, 2012, the women's bathroom door closed on a girl's right hand when she stepped back resulting in injuries.
4. On August 21, 2012, there was an exterior door injury to a child's pinky, possibly broken.
5. On September 3, 2012, child finger injury on inside of door hinge at starboard aft door.
6. On August 14, 2013, a deck 3 door closed on the fingers of a child. Unclear how.
7. On September 30, 2016, Ms. Arnold injured her fingers on the hinge side of the door (subject incident; see below).
8. On August 6, 2017, a child injured his right-hand ring finger in an 01 deck door.

The Incident:

The subject injury occurred on September 30, 2016. (A, p7)

Captain Paul Hennessy was the Master on that date. (C, p53)



On September 30, 2016, Ms. Arnold was traveling with her brother, Patrick Arnold. (A, p7)

They were going to a wedding on Nantucket. (A, p8)

This was the first time Ms. Arnold traveled by ferry to Nantucket, but she had been on other ferries and small recreational vessels. (A, p9)

They were walk on passengers. (A, p12)

They boarded in the early afternoon, the 2:15 p.m. departure. (A, p15, D, p37)

Purser Healy inspected the door around the time of the incident; and as far as he could discern, it was working correctly. (D, p29)

The weather was gloomy, but mostly calm.

She did not hear any announcements. (A, p27)

They boarded at a midship ramp and followed the crowd to the seating area. (A, p13)

They seated themselves in a diner style booth (A, p14) nearer the bow² of the vessel. (A, p23)

Ms. Arnold bought her brother and herself beers at the concession stand. (A, p19)

Ms. Arnold drank about half of the beer. (A, p19)

After about 25 to 35 minutes Ms. Arnold went to the ladies' room. (A, p19)

She was not wearing sunglasses. (A, p28)

The weather is recorded as Force 7 East Northeast. (D, p101)

The vessel was not moving to an extent that it inhibited her walking. (A, p27)

She went to the port side of the vessel and aft³ to get to the ladies' room. (A, p23)

The ladies' room was to her left side, and she opened the door and walked in. (A, p24)

The door handle was on her right side and opened inward into the ladies' room. (A, p24)

She noticed the door was very heavy; she had to use both hands to open it. (A, p25)

She used her right hand to open the door and her left hand to add strength to open the door. (A, p26)

² Ms. Arnold's description of her location appears to be inverted from the actual configuration of the vessel. Her description would indicate she was sitting closer to the stern of the vessel. If one assumed she sat at the starboard side of the vessel closer to the stern, her entire description is consistent.

³ See footnote. This is more likely to be forward rather than aft.



The door closed behind her automatically. (A, p26)

The door shut quickly. (A, p33)

She did not think about the fact that there was a closing spring. (A, p27)

The ladies' room contained stalls, and there was a woman and child inside the ladies' room. (A, p28) She is not sure if they departed ahead of her. (A, p29)

When departing the ladies' room, she noticed the door closer, and is familiar with its purpose and adjustment. (A, p31)

She turned the knob. (A, p35)

She opened the door with her right hand all the way and walked out. (A, p33)

She let go of the handle. (A, p36)

As soon as she stepped through the door, the boat started to rock. (A, p36) She had just stepped past the threshold. (A, p41)

She immediately turned around to the right and started to look for something to grab. (A, p36) Maybe she took a small step. (A, p44)

The door was wide open so the door was not there to grab onto so she grabbed the wall. (A, p44)

She braced herself against the wall to the left of the door. (A, p36, p38)

Her left hand was on the wall and her right hand was on the frame (A, p46) between her head and neck in height. (A, p46)

Her right hand was shoulder height just a little lower. (A, p47)

She did not realize her right hand was on the door frame. (A, p48) Her hand was in that position less than a couple of seconds, two seconds or so. (A, p49) She did not have time to process that her hand was on the hinge side of the frame. (A, p50)

And within seconds the door slammed shut (1, p38) and pinched her middle finger and her ring finger. (A, p53)

The door closed and locked on her fingers. (A, p55)

The door slammed instantly and that should not happen. (A, p57)

Somebody helped her open the door to release her fingers. (A, p53)

The opposite wall in the passageway was more than 6 feet away. (A, p40)

**Post Incident:**

Purser Healy prepared the incident report. (D, p95)

Marine Safety Consultants took a video of the door closing on October 27, 2016. This video shows a door closing speed of 3 to 4 seconds. There is little door closing hold, but no indication of hard slamming. (J)

Captain Gifford was present at this inspection at the request of Mr. Parent, director of human resources. (C, p36 and 37)

On October 11, 2016, the Steamship Authority was instructed by plaintiff's attorneys not to make adjustments to the women's head door closer. (S)

A number of videos were taken of the door closing in May of 2017, where the door closing speed appeared to be similar, and possibly a little faster, than in the October 2016 video. (K)

On 26 July 2017, there was a work order for possible replacement of the head doors for lighter doors. (B, exhibit 6, p5)

Lighter doors were discussed during the vessel's annual maintenance from December 2017 through January 10, 2018, but it was decided not to install lighter doors. (B, p29)

On December 29, 2017, Mr. Michael Panish inspected the subject door at which time the door did not fully self close within the frame and would not latch. (A3)

Mr. Panish cycled the door 10 times to ensure accuracy of the test. (A3)

Mr. Panish measured the closing force and speed. He measured the door closing speed to be 1.5 to 2 seconds for contact with the jamb. (A3)

Mr. Panish issued his report on February 2, 2018 and concluded the door was non-compliant with ANSI, ADA, NFPA, and USCG standards. (A3)

Mr. Panish provides various opinions that will be dealt with in the Technical Discussion section of this report.

Dr. Charles Cushing also inspected the vessel on December 29, 2017. (A3)

Dr. Cushing compares the women's head handrail arrangement with the men's head handrail arrangement and opines that there should be a handrail at the ladies' room similar to the men's room.

Dr. Cushing appears to opine that the door closers are not annually inspected, but rather on average only once every 2.5 years.

Dr. Cushing reviewed work orders and appears to conclude that door maintenance is inadequate, but there is no outstanding work order for the subject door.



Dr. Cushing estimates the roll period of the vessel at 13 seconds and opines the vessel would have been rolling.

Dr. Cushing notes that 3.66 door injuries per year for 3 million passengers carried is a cause for concern.

Dr. Cushing provided various opinions that will be dealt with in the Technical Discussion section of our report below.

On January 10, 2018, the door was adjusted as recorded by Maritime Claims Associates. (R)

INSPECTION:

We attended survey aboard the subject vessel on February 21, 2018, while it was in service on the Nantucket run. The survey took place while the vessel was loading and discharging at its berth at Hyannis, Massachusetts.

The subject vessel is a typical ferry that is outfitted to more recent passenger vessel standards, including reasonable ADA accommodations such as elevators to the passenger deck.

All passenger doors are fitted with door closers, and all interior passenger doors are A60 standardized.

The construction standard of the vessel is typical of a passenger vessel of this type, including the profusion of signage and warnings.

Door closure speeds were evaluated throughout the passenger area and averaged around 5 seconds, with some doors somewhat slower. None of the doors surveyed were found to slam.

The vessel is fitted with one men's and one women's bathroom (head) with multiple stalls.

At the time of survey, the men's head and women's head door closure speeds were similar at about 5 seconds each.⁴

The door closure speed reduced at an opening of about 5 inches.

The women's head door would contact the door jamb at the lock side but would not fully latch most of the time. The issue was inspected and discussed and appears to be related to paint buildup but is not considered to be a relevant technical issue for the subject matter.

The bulkhead that contains the head doors runs fore and aft, and the women's head door hinge is at the aft edge of the door.

⁴ A smaller crew access door between these two doors closed a little faster but did not slam.



The opposite bulkhead of the passageway has a grab rail outside of the women's head.

There is no grab rail at the bulkhead that contains the doors.





The men's head door hinge is at the forward end of the bulkhead. The men's head has a grab rail on the bulkhead at the lock side but not at the hinge side.

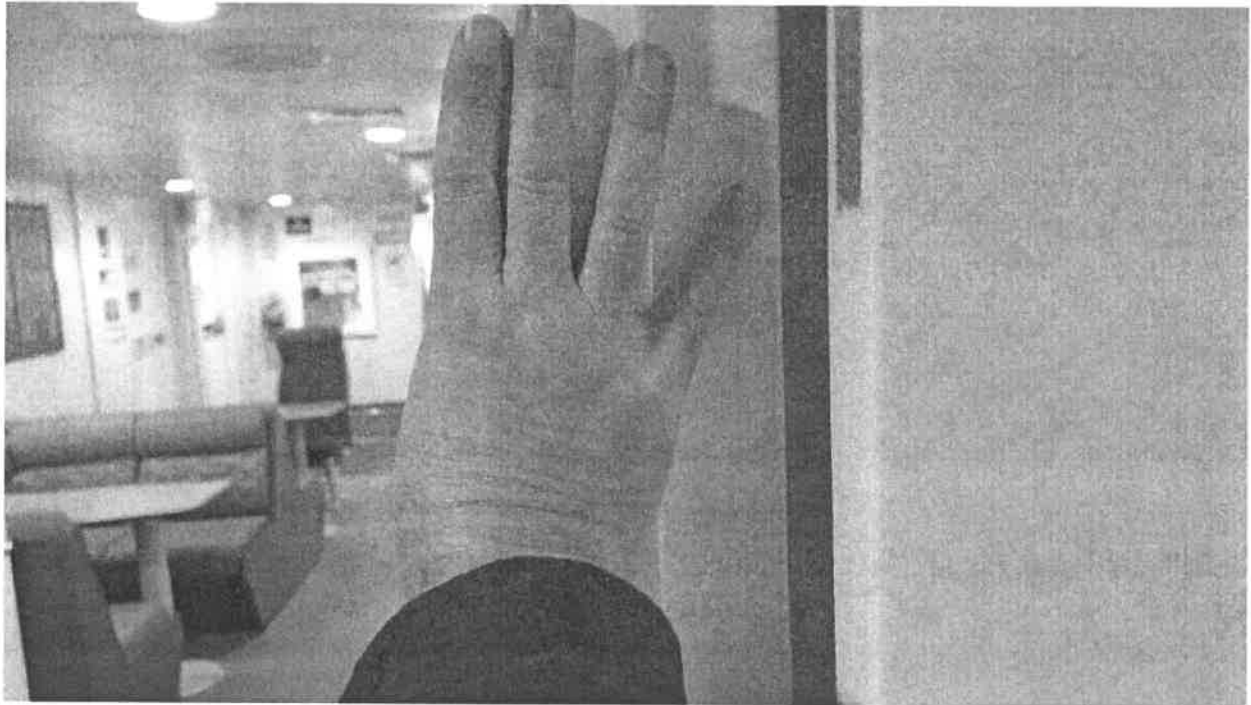
Captain Charles Gifford and Mr. Scott Perry, the person who performs most of the door adjustments, were present.

Mr. Perry reports that most of the door closer adjustments are performed through a work order system, but he occasionally makes a quick adjustment if he is aboard and feels a door needs adjustment. He opined that the door closure behavior of the women's head door at the time of survey was appropriate. In his experience, door closers tend to speed up if not adjusted. He does not recall ever having to adjust a door to close more quickly.

I took a number of measurements and made various observations:

The following was noted:

1. The distance from the door to the handrail in the aisle is 5 feet (60 inches).
2. The door width is $37\frac{3}{8}$ inches
3. The door opening at the lock side is $13\frac{1}{2}$ inches by the time a finger inserted in the hinge side jamb starts to get pinched (experience pain). Pinching occurs very rapidly with only a tiny further door excursion.
4. As such, finger pinching will occur prior to the 10-degree door closure limit.
5. When resting a hand on the jamb at shoulder level while standing inside the door opening, a natural right-hand rest would expose the outboard side on the hand (pinky finger) to a pinching hazard, before the ring and middle finger are exposed.



6. Ring and middle fingertip exposure becomes more likely when the person has left the doorway and their body has passed the hinge side of the door towards the bow of the vessel. Then a left and right-hand bulkhead rest against the bulkhead during a vessel roll would expose the middle and ring fingertips first to pinching.





After the inspection, we requested to be supplied with the instructions to a Dorma door closer as provided to the maintenance staff as a spare parts. At the time of this request, SSA did not have a Dorma 8616 door closer in stock but provided the instructions to an 8900-series door closer that they had in stock. (P) The adjustment instructions to this model door closer are provided on page 6 (Rev. 12/08) as follows:

"Door should close in 3 to 6 seconds"

"8916 meets 5-pound interior barrier free requirements. If necessary, adjust closer spring and test pull forces until proper forces are obtained, ball bearing hinges and pivots should always be used."

We downloaded an 8616 set of installation instructions from the Dorma website. (Q) The adjustment instructions are on page 6 (Rev. 01/09) and the instructions are identical to the 8900 series:

"Door should close in 3 to 6 seconds"

"8916 meets 5-pound interior barrier free requirements. If necessary, adjust closer spring and test pull forces until proper forces are obtained, ball bearing hinges and pivots should always be used."

There is no mention of inspection requirements in either of the above instructions.

TECHNICAL DISCUSSION:

The subject matter relates to an injury sustained due to finger pinching in the hinge side of a door aboard a passenger vessel.

There are similarities and differences between land-based finger pinching incidents and ship-based finger pinching incidents, and this will be further discussed below.

In this particular incident, the following factors have been identified by Mr. Panish and Dr. Cushing:

1. Door closer adjustment
2. Handrail availability
3. Vessel movement

There is another reasonable factor that has not been addressed by Mr. Panish and Dr. Cushing, and that is lack of attention by Ms. Arnold with regard to her environment.

In addition, with regard to door closer adjustment, there appears to be an allegation of inappropriate safety management.

We will discuss these factors, but first provide a technical discussion of the injury event.



Event Discussion:

The subject matter, as described by Ms. Arnold, appears to have occurred as follows⁵:

1. Ms. Arnold had used ferries before.
2. Ms. Arnold was a walk on passenger.
3. Ms. Arnold did not hear any announcements.
4. Ms. Arnold did not have any visibility issues.
5. The weather was gloomy but calm at the time of departure.
6. About 25 to 35 minutes into the voyage Ms. Arnold got up.
7. At that time the vessel was not moving to an extent that it inhibited her walking.
8. Ms. Arnold went to the starboard side of the vessel and forward to get to the ladies' room.
9. The ladies' room was to her left side, and she opened the door and walked in.
10. The door handle was on her right side and opened inward into the ladies' room.
11. Ms. Arnold noticed the door was very heavy; she had to use both hands to open it. She used her right hand to open the door and her left hand to add strength to open the door.
12. The door closed behind her automatically and she noted the door shut quickly.
13. When departing the ladies' room, she noticed the door closer, and is familiar with its purpose and adjustment.
14. Ms. Arnold turned the knob (handle).
15. Ms. Arnold opened the door with her right hand all the way and walked out.
16. Ms. Arnold let go of the handle.
17. As soon as she stepped through the door and just had stepped past the threshold, the boat started to rock.
18. The opposite side in the passageway was more than 6 feet away.
19. Ms. Arnold immediately turned around to the right and started to look for something to grab and maybe took a small step.
20. The door was wide open so the door was not there to grab onto so she grabbed the wall. (Ms. Arnold saw the door prior to getting pinched.)
21. Ms. Arnold braced herself against the wall to the left of the door, with her left hand on the wall and her right hand on the frame between her head and neck in height.
22. Her right hand was shoulder height just a little lower, but she did not realize her right hand was on the door frame.
23. Her hand was in that position less than a couple of seconds, two seconds or so.
24. She did not have time to process that her hand was on the hinge side of the frame.
25. The door slammed instantly shut and locked on her middle finger and her ring finger.

There are a number of technical observations that warrant some discussion and refinement of the above sequence.

- There were vessel announcements providing warning with regard to vessel movement.
- Vessel movement gradually increased, which should provide increased caution by passengers.

⁵ The description is adjusted to conform to the more likely path taken by Ms. Arnold



- Ms. Arnold was aware that the door was relatively heavy to operate and had a door closer.
- Ms. Arnold apparently had difficulty opening the door on the way in but not on the way out, since she opened the door all the way instead of slipping through the minimal gap needed to open a heavy door. It is highly unlikely that the forces would have been significantly different, and Mr. Panish (in a much later and therefore not necessarily relevant test) noted that the push force was 12 pounds and the pull force was 15 pounds, opposite of what Ms. Arnold appears to describe.
- Ms. Arnold was aware the door was self closing.
- The handrail on the opposite bulkhead was 5 feet away and clearly visible.
- When placing her hands, Ms. Arnold observed that the door was there prior to placing her hands and still placed her right hand on the door jamb.
- Based on our inspection and reasonable hand positioning at shoulder level, and her statement that the door itself could not provide support, Ms. Arnold had already left the doorway and was positioned forward of the hinge side of the doorway within reach of the handrail on the opposite bulkhead.

Incident Technical Aspects:

The above incident sequence provides some further technical insight.

If Ms. Arnold was restraining herself from falling towards the bathroom bulkhead, she would not be most likely to reach down to a handrail that is at waist height, since reaching down to the handrail and applying a resisting load would not be effective in restraining her head or upper body from making contact with the bulkhead.

Based on the above incident sequence, it can be concluded that closing speed is not a factor in this incident, since a slow closing door could also have resulted in Ms. Arnold's injuries. Pinch contact would occur at a door opening of about 13½ inches (22 degrees) and severe pinching would reasonably have occurred at 50% reduction of the remaining opening (11 degrees). This is still in the sweep closing phase and, whether slow or fast, the time to move from 22 to 11 degrees is much less than the one or two seconds that Ms. Arnold placed her fingers in the gap. At a closing speed of 11 degrees per second, the time to close the door from 90 degrees to 12 degrees (the sweep phase limit as advocated by Mr. Panish) would be 6.5 seconds, longer than the 5 seconds Mr. Panish advocates.

The latch phase of 1 to 1.5 seconds, plus a 1 second pinch period during the sweep phase starting at 22 degrees, correlates with Ms. Arnold's description of the duration of the incident. This, by itself, would actually indicate that the closing speed was acceptable at the time of the subject incident.

At Mr. Panish's inspection, which occurred over one year after the subject incident and, as such, would not accurately represent the conditions at the time of the incident, door forces were measured. He measured the push force to open the door at 12 pounds and the pull force to open the door at 15 pounds. While high, these forces are not excessive. Furthermore, the report does not indicate if these force measurements take into account the friction forces associated with interference between the jamb and the door as noted by Mr. Panish on page 7 of his report.



Mr. Panish also measures dynamic door closing forces between 112 and 92 pounds. It is not clear if he implies that ship operators should be performing such measurements and it appears to be more accurate to note that the force requirements that he refers to in his report are part of instructions to manufacturers instead of operators. (see A3, p4)

Mr. Panish focuses on the latching forces, but, by that time, the pinching has already occurred. Instead, it is significant to note that when a very heavy door is swinging at 11 degrees per second, it is not required to be slowed down until the door has already pinched the fingers for one second.

Regardless, it is noted that even a five-pound force has a tremendous leverage arm of over 37 inches when fingers are pinched at the hinge. It is unlikely the fingers are inserted more than an inch behind the jamb; and, as such, the pinching force on fingers is at least 150 pounds with a 5-pound door closing force and almost certainly much more. It is noted that Mr. Panish's measurements would indicate pinching forces in the range of 3700 pounds.

In this regard, Mr. Panish's measurements provide indications of forces, but even standard and conforming forces would inevitably result in serious finger injuries when inserted in the hinge side of the door. Noting that the door and jamb are steel and they close quite tightly, it would not be unreasonable to expect full finger amputation with the forces that Mr. Panish measured. On the other hand, the forces that would be experienced with a more appropriately adjusted door (150 pounds) conform more reasonably to Ms. Arnold's injuries.

There are land-based standards for land-based door closers, but aboard ship the standards are less specific. This makes sense since the ship environment is more complex and less suitable to rigorous standardization. While there are specific land-based standards, it can be reasonably concluded that even ashore door closer operation and maintenance is far from universally applied, if for no other reason than the fact that Mr. Panish makes note of two different standards, the ADA and the Massachusetts standard, which differ in adjustment approaches.

I am not an expert on shore-based door closer adjustments but am curious as to how the average building superintendent measures the 12 and 10-degree angles that need to be established to "properly" adjust a door. I do seriously doubt that periodic door closure speed checks are performed by land-based building superintendents who carry stop watches, strain gauges, protractors and markers (to mark the 12 and 10-degree openings for every door in their building with a door closer) and exercise every door 10 times to ensure that the hydraulic fluid is properly distributed through the door closer before the door closer is even evaluated.

Furthermore, while 10 closures may provide some form of measurement of the door closer's performance, it also indicates that door closers are not completely consistent in their performance, and one is left to wonder if Ms. Arnold's use of the door constituted a 10th use or a 2nd use or a 20th use and how this would have affected the speed at which the door closed.

I do have extensive experience with shipboard operations, including the management of passenger safety and safety systems. Marine safety is a very complex affair that includes security, lifesaving, firefighting, and also continuous attention to passenger safety.



With regard to door closer adjustment and management aboard ships, the following is noted:

1. There are no specific marine use or marine grade door closers or standards for marine grade door closers.
2. Land-based door closers are used aboard ships even though the manufacturers may note that their door closers are not specifically approved for marine use.
3. Besides cycle to cycle inconsistencies, marine door closers function in an environment where the door can be influenced by vessel roll and higher ventilation and wind pressures, thereby exerting a higher or a lower pressure on the closer at different times.
4. The door closer is subjected to vibrations from the propulsion system.
5. Door design is inherently different on ships than buildings, both with regard to maintenance issues and with regard to use and inspection routines.
6. Ships are manned differently than shore-based structures that use door closers and that results in different inspection and adjustment routines.
7. In a building, there is no specific requirement that a building superintendent passes through all public spaces of the building in a daily routine. On this vessel in particular, the vessel crew passes through each passenger door at least once a day (many more times for the head doors) and, as such, a trained crew engages in a level of inspection that far surpasses an annual inspection routine.
8. On ships, all crew members are part of safety management while this level of involvement is much lower in buildings, where maids and janitors do not perform lifeboat drills, firefighting drills, security drills, and other safety functions.
9. On ships, personnel tend to have very wide-ranging responsibilities and, due to the large range of tasks, it is unrealistic to have formal procedures for every task. To a very large extent, they are required to use their minds in evaluating the safety of equipment and processes.
10. Aboard ships, when instructions are provided with a part, the instructions are considered to be valid and crew members do not, and are not expected to, find alternate instructions or interpretations of instructions.

In my review, it has become apparent that there is a very strong safety culture aboard the subject vessel, which includes door closer issues.

Door closers are specifically monitored by all deck crew members (see the 2016 crew orders) and issues are reported to the Captain and logged into the maintenance system for correction.

The crew does not perform the very detailed recommended inspection routine that Mr. Panish advocates, but they are continually engaging the doors; and if a door is thought to close too fast or not close properly to an extent that it affects the passengers, they will initiate efforts to correct it.

It is significant to note that, while I explain that door closure speed is not necessarily a factor in the subject matter, there are also no significant indications that the door was not properly adjusted. In particular, it is noted that the Dorma installation instructions recommend a closing time between 3 and 6 seconds.



The door was not listed in the Maximo system as requiring adjustment. On a more formal level, it can be reasonably expected that the USCG and annual overhaul routine involves specific door adjustments as needed. The door had also been listed as having received attention on 26 May 2016, thereby easily meeting Mr. Panish's annual inspection interval. Between that time and the incident, the door had been used by the ship's crew hundreds, if not thousands, of times⁶, and no requests for adjustment were made even though they are specifically tasked to observe proper door operation.

Mr. Panish's inspection of the door occurred over one year after the subject incident, which specifically had not been adjusted since the incident at the admonition of the plaintiff's attorney. (S) At that time, the door closed faster than desired but was known not to be altered. It is estimated that between the door's last adjustment and Mr. Panish's inspection over 100,000 people passed through the door resulting in the same order of cycles.⁷

Mr. Scott Perry, the person who performs many of the adjustments on these doors in this marine environment, reported that, over time, doors will start to close faster but do not generally close more slowly. As such, Mr. Panish evaluated a purposely unadjusted door and, quite probably, a door that closed faster at his time of inspection than at the time of the incident.

With regard to having notice of potential door problems, Dr. Cushing cites four prior women's head door injuries since 2011.

The below is a summary of the "Eagle" door injury reports where women's head door injuries are shown in bold:

1. On October 6, 2011, there was a door incident where a child had a door slammed on a thumb in an exterior door but did not require a 2692. High wind was listed as a factor.
2. **On November 20, 2011, a woman injured her right thumb with minor bleeding (poss. broken) when entering the women's head. Rough conditions were noted.**
3. **On June 29, 2012, the women's bathroom door closed on a girl's right hand when she stepped back resulting in injuries.**
4. On August 21, 2012, there was an exterior door injury to a child's pinky, possibly broken.
5. On September 3, 2012, child finger injury on inside of door hinge at starboard aft door.
6. On August 14, 2013, a deck 3 door closed on the fingers of a child. Unclear how.
7. **On September 30, 2016, Ms. Arnold injured her fingers on the hinge side of the door (subject incident; see below).**
8. On August 6, 2017, a child injured his right-hand ring finger in an 01 deck door.

⁶ Assume 6 roundtrips for 300 days with at least one crew inspection of the head at each leg, this results in 3,600 inspections per year, not counting the female crew's use of the head.

⁷ The vessel carries about 100 passengers on average per leg and runs 6 legs per day for about 300 trips per year, which results in 180,000 passengers per year, assuming half females, one time in and one time out per female passenger, but occasionally two or more people entering or exiting at once. This would result in approximately 90,000 cycles per year.



Based on the above, Dr. Cushing appears to count women's head door injuries on all Steamship Authority vessels, since on the "Eagle" the last women's head door injury report occurred on June 29, 2012; and since 2011, only two women's head injuries were recorded⁸.

It is also interesting to note that the last prior door injury of any kind occurred over three years prior to the subject incident.

It is important to note that the subject incident relates to a person placing her hand in the hinge side door jamb, and the only indication of such a possible injury occurred in 2012 where a child may have placed her hand on the hinge side of a door.

As such, it is unreasonable to suggest that the door closer injuries are a common issue on the subject vessel and that the Steamship Authority had any prior notice, or awareness, of the possibility that Ms. Arnold would injure herself by inserting her fingers in the hinge side of the door.

Dr. Cushing indicates that there is an average of 3.66 door/finger injuries per year. In quantifying the issue as an annual rate, one can only conclude that this rate must pale against all finger door/finger injuries in the world, which must run in the millions per year and must therefore receive immediate, and much more extreme, opinions by Dr. Cushing than he provides here.

Therefore Dr. Cushing's quantification is not useful, and it makes more sense to get a measure of door/finger injury issues by providing some level of per capita characterization of door/finger injury rates.

In this regard, it is noted that the Steamship Authority carries over 3 million passengers per year. That means that, in effect, using Dr. Cushing's approach, the odds of a door/finger injury by a passenger taking a trip on a Steamship Authority vessel is about one in a million. I do not have land-based or marine industry door/finger injury rates, but a one in a million injury rate is not exceptional by any standard.⁹

A closer examination of the injury reports will actually reduce these odds dramatically for adults, since door/finger injury incidents are more common for children regardless of the setting, and this also appears to be the case aboard the subject vessel.

Furthermore, if one were to take a close look at the problem itself, which is the insertion of a hand by an adult in the hinge side of a self-closing door, it can be concluded that there is no precedent for this type of injury aboard the vessel or even on the entire fleet.

Regardless of the fact that door finger injuries would not have been identified as a significant statistical problem aboard the vessel, the Steamship Authority takes a conservative approach and still reminds the vessel crew to pay attention to door closers in case they are noted to be malfunctioning.

⁸ Since the replacement with the new door closer in December 2011, the only known injury at the women's head occurred in June 2012 and relates to a girl stepping back into the head when the door closed.

⁹ I am not comparing ferry passengers with skiers; but for order of magnitude comparison purposes, it is noted that reportable ski injuries are about 2600 per million visits. (T)

**Discussion of Panish and Cushing Reports:**

Based the above discussion, we note that Mr. Panish's and Dr. Cushing's analysis of the subject incident contains some inaccuracies and errors. Since both experts provide overlapping opinions, I will discuss their opinions in combined fashion.

The following opinions by Mr. Panish and Dr. Cushing are noted:

1. **The door closer was not maintained.**

Based on the above discussion, it is apparent that the door closer is receiving maintenance as needed.

2. **The door closer was not inspected.**

Based on the above discussion, the door closer receives a much higher level of inspection than the suggested once per year inspection.

3. **There was evidence of door closer leakage.**

At his inspection over one year after the incident, Mr. Panish noted that there was hydraulic leakage around the mechanism and suggested this was related to seal leakage from wear. Mr. Panish fails to explain that seal leakage that could have occurred after the incident may explain why the door closer was operating faster than desired.

4. **The door closer is not properly adjusted.**

While the door closer may not have been adjusted according to the manufacturer's standard, there are no indications that the door closer is not being adjusted to customary shipboard standards and quite likely was properly adjusted according to Dorma's available instructions.

Neither Dr. Cushing nor Mr. Panish provide any indication that ship's crews on any vessels of this type adjust doors using the tools and adjustment protocols that Mr. Panish advocates.

It is noted that Mr. Panish generally refers to manufacturer's standards rather than marine operational maintenance standards or the standards made available to end users.

Furthermore, it is noted that there are no contemporaneous observations about the door closer's adjustment beyond Ms. Arnold's testimony, which is not technically conclusive based on her description of being able to fully open the door with one hand, when she exited the head.

5. **The greater force of the door closing was a factor in the injury.**

Whether measured correctly or not, and whether present at the time of the incident or not, the force a properly adjusted door generates is already sufficient to cause serious finger injury when fingers are inserted in the hinge side door jamb.



6. A misadjustment of the door closer was the root cause of the injury.

Based on my above discussion, there are no indications that a higher than normal door closing speed would have to be the cause¹⁰ of the incident and, as explained, the incident could have happened just as likely with a door speed that conforms to Mr. Panish's ideal setting.

Due to a lack of general knowledge of the door closer setting at the time of the incident, the door may not even have been misadjusted and therefore may not even have been a causal factor within the context of causal analysis.

7. There is a special qualification for door closer adjustment personnel.

I have never seen such a qualification aboard vessels of this type and am not aware of any crew training standards in this regard.

8. The doors did not latch properly.

This is not a causal issue to the subject incident and, if present at the time of the incident, may have reduced the extent of the injury by reducing the amount of compression of Ms. Arnold's finger in the steel door jamb.

9. The doors should have been preventatively maintained once a year.

Annual preventative maintenance would consist of an annual functional inspection. If the door functioned properly, no work is needed. On the subject vessel, the inspection cycle is much higher and maintenance, if needed, would be much more frequent.

Furthermore, it would be unrealistic for Steamship Authority personnel to reach beyond the manufacturer's instructions provided with the door closer, and no such inspection requirements are provided in the instructions.

10. The lack of maintenance created a dangerous condition that led to Ms. Arnold's injury and there should have been more injuries.

Mr. Panish's observation that there should have been more injuries can lead one to more correctly conclude that the lack of injuries of Ms. Arnold's type proved that door maintenance was satisfactory.

11. A major contributing factor was the absence of handrails.

All handrails in way of the door conformed to USCG requirements. Dr. Cushing misstates the distance of the handrail to Ms. Arnold by indicating the handrail was more than 72 inches away from her when she exited and turned away from the door.

¹⁰ Dr. Cushing uses the term "Root Cause." This term is laden with legal interpretations and, from an engineering point of view, is impractical. As an engineer, I prefer to discuss causal factors.



First, it is noted that the distance between the handrail and the door when closed is 60 inches, less than the USCG maximum distance of 72 inches, and, second, it is noted that Dr. Cushing's interpretation of Ms. Arnold's position at the time of the incident is incorrect. Ms. Arnold most probably was well inside the passageway when she put her hand on the door jamb.¹¹

Dr. Cushing argued that there should be more handrails and uses the men's head door as an example. Unfortunately, his example is invalid, since the lock side of the door has a handrail, but the hinge side does not and, as such, a handrail as he advocates would not have prevented the incident.

Furthermore, it should be noted that Ms. Arnold used her hands to prevent herself from falling towards the bulkhead and people that fall do not reach down to a waist height support if a flat higher surface is present. As such, a low handrail would not have been likely to have prevented the subject incident.

12. Ms. Arnold was not negligent in placing her hand on the door jamb.

As an engineer, I do not draw legal conclusions by calling people's actions negligent, but it is technically noted that, generally, as people mature into adulthood, at some stage, they learn to avoid hinge side door jambs.

13. There are statistical indications that there are door closer problems aboard Steamship Authority vessels.

As noted in my report above, there are no statistical indications that there was anything wrong with the Steamship Authority doors.

14. The incident was not reported to the USCG.

It is noted that no 2692 report on this incident has been located. However, this issue is not causal to the subject matter.

Causal Analysis:

It is generally useful to provide a causal chain of events to shed further light on an incident.

Based on my review of the subject matter, the following causal chain is noted:

1. Ms. Arnold opens the women's head door and exits the head.
2. The vessel is rolling.
3. There is a clearly visible handrail right across the passageway within 60 inches.
4. Instead of reaching for the handrail, Ms. Arnold turns to her right into the passageway and the vessel rolls to the extent that Ms. Arnold feels she needs to support herself on the bulkhead.

¹¹ Note that, independently of the above, it can be shown that the very furthest she could have been from the handrail would occur when she has her right hand on the jamb and the door is closed to within less than 13½ inches and the door has not stopped on her heels. As such, the handrail would always have been within 72 inches, unless she was standing at the extreme left edge of the door, and then it is unlikely she could have reached out with her right hand into the jamb and with her left hand against the bulkhead.

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Our Project No. WT-25637



5. Ms. Arnold places one hand on the bulkhead and her other hand on the door jamb within pinch contact of the door, instead of on the door itself or adjacent to her other hand on the bulkhead.
6. Ms. Arnold knows the door is closing while she inserts her hand, and her fingers are injured by the closing of the door.

It is noted that none of the above conditions are indicative of any lack of care by the vessel operator.

It is also noted that the door closing speed is not listed as a causal factor. The door closing speed is not listed as a factor since my above discussion indicates that a slow closing door poses an equal hazard. It can also be concluded that the door closing speed is not a factor by posing the following hypothetical human decision, "If I knew that the door would close at exactly the required speed according to some hypothetical standard that I am not familiar with, would I then insert my fingers in the hinge side door jamb to steady myself?"

CONCLUSION:

Based on the above, and to a reasonable degree of engineering certainty, the above incident appears to have been caused by momentary inattention by Ms. Arnold when she exited the women's head.

Based on my review, and to a reasonable degree of engineering certainty, there are no indications that a lack of reasonable care by the vessel operators or crew was causal to the subject incident.

Very truly yours,

MARTIN, OTTAWAY, van HEMMEN & DOLAN, INC.

Rik van Hemmen, P.E.

Attachments:

1. Resume
2. Prior testimony list



Published on *Martin, Ottaway, van Hemmen & Dolan, Inc.* (<http://www.martinottaway.com>)

Rik F. van Hemmen



Professional Experience

2011 - Present

President and Senior Partner, MARTIN, OTTAWAY, van HEMMEN & DOLAN, INC.

1993 - 2011

Vice President and Partner, MARTIN, OTTAWAY, van HEMMEN & DOLAN, INC. Areas of specialization include forensic engineering, human factors, vehicle design and operations, ship appraisals, ship salvage, structural surveys, naval architecture and project management.

1987 - 1993

Engineering and Marine Consultant, FRANCIS A. MARTIN AND OTTAWAY, INC.

1984 - 1987

Chief Engineer, JOHAN VALENTIJN, INC., a high technology design and engineering firm in Newport, R. I. Responsibilities included: Conception and implementation of various design projects ranging from maritime design to industrial design, coordination of out of office research projects, construction management, design and supervision of computer facilities. Functioned as

Chief Engineer for the EAGLE 1987 America's Cup.

1982 - 1984

Ocean Engineer and Surveyor for the AMERICAN BUREAU OF SHIPPING at their headquarters in New York City. Analysis and certification of fixed offshore structures. Final technical machinery approvals of every vessel and rig approved by the Bureau during that period, and the computerization of the flow of plan approvals in the machinery department.

1979 - 1981

Work-Study employment with MAR, INC., an engineering company specializing in the solution of ocean-related problems. Worked on various defense projects, including the design of high speed sonar array depressors, variety of towing tank tests, and the design of a JTIDS communications simulation computer program.

Notable Projects

Testified as an expert witness on Naval Architectural and Engineering matters in arbitration, State and Federal Court on various occasions.

Analysis of numerous maritime accidents with regard to stability, human factors, loading, operational and structural issues.

Salvage Master on M.V. "HUAL INGRITA" grounding in 1990.

Consultant Naval Architect for Smit Americas in execution of salvage projects in the Western Hemisphere with responsibility for the design of salvage approach and methods in collisions, sinkings and groundings.

Analysis of the change in oil outflow in the "EXXON VALDEZ" incident if the vessel were to be fitted with a double bottom for plaintiff's counsel. Testimony on structural aspects during "EXXON VALDEZ" trial in June of 1994.

Chief Engineer for the EAGLE 1987 America's Cup Campaign; implementation, supervision and coordination of research projects involving approximately 30 scientists and engineers.

Consultant to Owners and Underwriters of some of the world's largest yachts with regard to complex damage issues.

Consultant to McDonnell Douglas Corporation on the application of their Computer Aided Design system to Naval Architecture.

Design and construction supervision of a wide variety of sailing and power yachts.

Education and Professional Qualifications

Registered Professional Engineer in the State of New York (1989) License Number: 065588

Board Certified Diplomate in Forensic Engineering by NAFE, accredited by the Council of Engineering and Scientific Specialty Boards (1993)

Bachelor of Science degree in Aerospace and Ocean Engineering from the Virginia Polytechnic Institute and State University, Blacksburg, VA (1982)

CO-OP certificate for completing the University's work-study program at MAR, Inc., Rockville, MD (1982)

Harvard Business School OPM 29 (2000)

Certified Qualified Individual for the Oil Pollution Act of 1990 and proven competent at the level of OSHA 24-Hour On-Scene Commander as per 29 CFR 1910.120(q) at Massachusetts Maritime Academy's Center for Marine Environmental Protection and Safety (1994)

Summer apprenticeship at the Boele-Bolnes shipyard in The Netherlands (1975)

College preparatory training in The Netherlands, senior year in high school in the United States (1977)

Memberships

Fellow, National Academy of Forensic Engineers

Fellow, Society of Naval Architects and Marine Engineers

New York Section Papers Committee Chairman 1992-1994

New York Section Executive Committee 1992-1994

1994 Ship Operations Symposium Steering Committee

Member Ad Hoc Panel #6 - Structural Response of Tankers to Collisions and Groundings 1999 - 2004

Member PE Licensing Committee 1999 - Present

Member Technical and Research Steering Committee 2002 - Present

Chairman Ship Repair and Conversion Technical Committee 2002 - 2008

Chairman pro tem ADHOC Panel 14 - OWS 2005 - 2006

Member Small Craft Technical Committee 2005 - Present

Member Human Factors Technical Committee 2005 - Present

Chairman Environmental Management Technical Committee 2009 - Present

Member (MT) Editorial Committee 2012 - Present

Senior Member, American Institute of Aeronautics and Astronautics

Member, Society of Marine Port Engineers of New York

Member, Human Factors and Ergonomics Society

Member, National Society of Professional Engineers

Member, American Boat and Yacht Council

Associate Member of the Association of Average Adjusters of the United States

Annual Subscriber to the British Association of Average Adjusters

Life member, United States Naval Institute

Awards

2014 New Jersey Council of County Vocational - Technical Schools (Monmouth County Vocational School District) Business Partner of the Year Award

1983 Society of Naval Architects and Marine Engineers Student Paper Award

1982 American Institute of Aeronautics and Astronautics/Soaring Society of America national sailplane student design award, Second Place

Technical Publications

"The Monoform Ship Concept: Design Principles and Preliminary Performance Characteristics", May 1982, for the Chesapeake Section of SNAME.

"Twelve Meter Design: State of the Art in 1986", April 1986, for the New York Metropolitan Section of SNAME. Published in the October 1986 issue of Marine Technology.

Various magazine articles and presentations regarding Computer Aided Design and yacht design, 1984-1988.

Contributor "Industrial Fire Hazards Handbook", chapter on shipyards. Publisher - National Fire Protection Association, 1989.

The Bulletin of the Association of Average Adjusters of the United States, Spring 1996, No. 10, "Remarks on Unrepaired Damage- Cause and Effect in Today's Market".

Author of chapter six "Commercial Vessel Issues" of Boat Accident Reconstruction and Litigation. Publisher - Lawyers & Judges Publishing Company, Inc., Tucson, AZ, 1996.

Guest speaker at the College of Insurance of New York City, Massachusetts Maritime and Virginia Tech on ship and yacht surveying, salvage and naval architecture and human factors.

"The Joint Field Survey Process" for the National Academy of Forensic Engineers. Published in the June 2000 Vol. XVII No. 1 issue of the Journal of the National Academy of Forensic Engineers.

"OWS Weirdness", October 2004, presented at SNAME annual meeting T&R session, Washington, D.C.

"A Proposal for a Joint Industry Effort at Improving Bilge Oily Water Separator Operation and Design", March 2005, for the New York Metropolitan section of SNAME.

"Oily Water Separators: 30 Years Experience and No Consensus". Published in the Summer 2005 issue of Cleaner Seas.

"Initial Recommendations For Bilge Oily Water Separator System Design And Operation", February 2006, presented at ASNE MEETS Symposium, Crystal City, VA and published in the Indian Journal of Marine Engineering in March 2006.

"Tales from the Cutting Edge", October 2007, presented at the Annual Meeting of The Association of Average Adjusters of the United States, New York, NY.

"The Need for Additional Human Factors Considerations in Ship Operations", September 2008, presented at the Second International Symposium on Ship Operations, Management & Economics in Athens, Greece, republished in October 2009 issue of Marine Technology.

"Filtration Challenges in the Marine Industry", September 2008, presented at the American Filtration Society Conference in Charlotte, NC.

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"Systems Design for Meeting New and Existing International Regulations", October 2012, presented at the Society of Naval Architects and Marine Engineers Annual meeting in Providence, RI and published in the 2012 Proceedings and Transactions

"The Anti Antifouling Clause Argument," October 2014, presented at the New York City Marine Insurance Day seminar

"Game Theory for the Maritime Professional," October 2014, co-authored with Hannah van Hemmen, presented at 2014 SNAME Maritime Convention in Houston, TX

"Salvage and Doing Da OODA Loop," October 2014, co-authored with Hannah van Hemmen, published in Soundings Fall 2014 issue

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"How is your Salvage Data Doing?" published in the Summer 2015 issue of Soundings

"General Salvage Project Safety Considerations" published in the Summer 2015 issue of Soundings

"A Chronology of Boating on the Navesink River," 2nd Edition, ISBN 978-1-4951-8054-5, 2015.

"The Search for Oil Spill Data" published in the Spring 2016 issue of Soundings

"Containerization V2.0" presented at SNAME Annual Meeting in Seattle, WA on November 4, 2016

"The Delightful Frustration of Cruise Ship Power Plant Design," presented to joint meeting of SNAME, ASME, and SAME, in Philadelphia, January 24, 2017, co-authored with Kyle Antonini

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**HENDRIK F. VAN HEMMEN
PRIOR TESTIMONY SINCE 1988**

COURT CASES:

1. Lentine vs. Aetna Casualty & Surety Co., Civ. No. 88-3126 (AET), U.S. District Court, Trenton, New Jersey – sinking calculations (expert)
2. Cargill, Inc. vs. C&P Towing, 1991 A.M.C. 101 (E.D. Va. 1990), U.S. District Court, Norfolk, Virginia – capsizing calculations (expert)
3. Sea-Land Service, Inc. vs. Atlanta Coffee Time, et al, State Court of Gwinnett County, Civil Action No. 91-C-1208-1 – hose fitting failure (expert)
4. M/V “OMINA” vs. M/V “BLUE CLOUD”, U.S. District Court, Houston, Texas, 1994 – collision analysis (expert)
5. M/V “EXXON VALDEZ”, oil spill litigation, Case No. A-89-095, U.S. District Court of Alaska – grounding analysis (expert)
6. Reinauer vs. Atco, U.S. District Court of Connecticut – engine failure (expert)
7. MS “GRIPARION” vs. Bulk Oil, High Court of Justice, London – bareboat charter dispute (fact witness)
8. Dow vs. Texaco, U.S. District Court, Norfolk, Virginia – bareboat charter procedures (expert)
9. Transamerica Premier Insurance Company vs. Thomas J. Ober, et al, U.S. District Court for the State of Maine, Civil Docket No. 93-342-P-C – valuation (expert)
10. Northern Assurance Co. Ltd., et al vs. Montauk Yacht Club & Inn, et al, Supreme Court of the State of New York, County of Suffolk, Index No. 909-89 – marina fire (expert)
11. Dooley & Johnson vs. Schat & Norfolk Shipbuilding, U.S. District Court, District of New Jersey, Civil Action No. 92-1848 – davit failure (expert)
12. Susan Rydell vs. Pan Am Equities, New York Health and Racquet Club, Inc., Supreme Court of the State of New York, 1996 – small craft ladder injury (expert)
13. Frederick vs. Greenwich Boatworks, Inc., et al, U.S. District Court for the District of New Jersey, Civil Action No. 94CV5643 (SSB) – technical opinion to the cause of water ingress (expert)

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14. Hadar vs. Concordia Yachts, System Three Resins, et al, Supreme Court of the State of New York – yacht valuation (expert)
15. Norfolk Shipbuilding & Drydock vs. Seabulk Transmarine Partnership, U.S. District Court for the Eastern District of Louisiana – valuation (expert)
16. Criscuolo vs. Atlantic Container Line SO, et al, and, Atlantic Container Line AB vs. Moran Enterprises Corp., et al, United States District Court, District of New Jersey, Civil No. 96 CIV, 5675 (JCL) – mooring line failure (expert)
17. Alec Mircinowski v. SCOW MC 191, United States District Court, Southern District of New York, 96 Civ. 3739 (PKL) – sand washout on barge, personal injury (expert), April 2001
18. Joel LaFemina v. Winter Harbor Brands (GREAT PECONIC), U.S. District Court for Eastern District of New York – fishing boat personal injury (expert), May 2004
19. Gary Prinski v. Blue Star Line, Ltd., Civil Action No. 02-7891, (AMERICA STAR), U.S. District Court Philadelphia – container vessel personal injury (expert), January 2005
20. Felham Enterprises v. Certain Underwriters at Lloyd’s, C.A. No. 02-3588 (ULYSSES) U.S. District Court Eastern District of LA – Shipbuilder’s Risk Dispute (expert), March 2005
21. Reed v. St. Lawrence Cement Co., L.L.C., St. Lawrence Cement, Inc., St. Lawrence Barge Co., Dann Ocean Towing, Inc., and the Barge Midnight One, In Rem, United States District Court Eastern District of New York – personal injury (expert), September 2006
22. David Meyers, v. Gwin Dredging & Dock, Inc., etc., et al., U.S. District Court, District of New Jersey, Civil Action No. 1:03-cv-05538 – dredge personal injury (expert), September 2006
23. Arthur Glick Leasing, Ltd., v William J. Petzold, Inc., Caterpillar, Inc., et al., Supreme Court of the State of New York, County of Sullivan – yacht design/valuation (expert), September 2006
24. Barge “HNSE 105”, Sinking Calculations, Dover Barge Company, Simms Hugo Neu v. Tug “Crow”, U.S. District Court, Southern District of New York (November 5, 2009 expert)
25. Kyla Shipping Co. v. Shanghai Zhenhua Heavy Industry Co., Ltd., et al., U.S. District Court, Southern District of Alabama, Southern Division, Civil Action No. 09-765-CB-N – M.V. “Zhen Hua 25” valuation (expert), December 3, 2009
26. Wolverine Motorworks v. Canadian Naval Memorial, Halifax, Nova Scotia – “Sackville” / “Larinda” – valuation (expert), March 16-17, 2010

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27. Melody S. Reynolds, Executor of Estate of David W. Reynolds, Deceased v. Shoreline Marina, LLC, et al. and Jane Amelia Budenbender-Smith, Administrator of Estate of Richard William Smith v. Shoreline Marina, LLC, et al., Virginia: In the Circuit Court for Franklin County, Case Nos. CL09003104-00 and CL09003836-00 – “Hacker Craft 33” – powerboat capsized (expert), April 28-29, 2010
28. Guzi v. TWFM Ferries, “American Princess”, Passenger Personal Injury, Supreme Court State of NY, (expert), January 2011.
29. Great Lakes Business Trust No. 1998-Dtd 10/10/98 and Great Lakes Dredge & Dock Co., LLC v. M/T Orange Sun, etc., et al., United States District Court, Southern District of New York, Case No. 08 Civ. 0941 (KBF) – Dredge “New York” – loss of use review (expert), January 24, 2012
30. Midwest Rescue Airboats, L.L.C. v. John Teichmann, et al., District Court of Douglas County, Kansas, Seventh Judicial District, Case No. 2011 CV 322, CAD, Airboats, Design Methods (expert), January 23, 2014
31. J.D. Irving, Limited v. Siemens Canada Limited, et al., Federal Court (Canada), Court File No. T-520-10, (“SPM 125” - load-out failure) (expert), October 14, 2015
32. Robin and Beverly Persad v. Global Companies, LLC, d/b/a Global Partners LP, Supreme Court of the State of New York, County of Kings : Civil Term : Part 70, Index No. 16906/2012 (terminal personal injury) (expert), September 27, 2016
33. Bonita Properties, LLC v. C&C Marine Maintenance Company, Campbell Transportation Company and Imperial Towing, Inc., United States District Court, Western District of Pennsylvania, Case No. 2:12-cv-00247-DSC (Riverboat “Becky Thatcher” - sinking) (expert), January 11, 2017
34. 19-foot, 1999 Stingray v. Tappan Zee Constructors, United States District Court, Southern District of New York, Case No. 13-cv-08307-CS (small craft collision) (expert), November 3, 2017

ARBITRATIONS:

1. New York Maritime Arbitration Proceedings between Hygrade Operators, Inc., Owner of the Tank Barge ST-112, and Leevac Marine, Bareboat Charterer of Tank Barge ST-112 – bareboat charter procedures (expert)
2. New York Maritime Arbitration Proceedings between Sanderling Maritime Ltd., of Monrovia and Akzo Salt, Inc. – discharge procedures (expert)

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3. New York Maritime Arbitration Proceedings between Lagoven and M/V OLYMPIC SPONSOR, Feb 2000, grounding analysis (expert)
4. New York Maritime Arbitration Proceedings between Pequod River Shipworks and Ferry Leasing, Dec 2001, construction dispute (expert)
5. New York Maritime Arbitration Proceedings between The Dutra Group and ECDC Environmental L.L.C. et al., May 2004, barge damage dispute, structural damages (expert)
6. New York Maritime Arbitration Proceedings between Lockheed Martin Corporation and Hotelaria y Servicios Petroleros, S.A. de C.V., April 2008, construction dispute (expert)
7. New York Maritime Arbitration Proceedings between Irving Shipbuilding and "Pearl Mist", April 19, 2010, construction dispute (expert)
8. New York Maritime Arbitration Proceedings between The Rice Company and IBN Agrotrading ("Nalinee Naree"), December 13, 2012, heavy weather damage (expert)
9. Arbitration between Matson Navigation Lines, Inc. and subrogated Hull and Machinery Underwriters of the S/S Lurline, Claimants, and COSCO (Nantong) Shipyard Co., Ltd., Respondent, ICDR Case No. 50 125 T 00413 11, May 28, 2013, shaft failure/ship repair dispute (expert)
10. New York Maritime Arbitration Proceedings between NS United Kaiun Kaisha Ltd. and Cogent Fibre Inc., Charterer ("Daishin Maru"), October 24, 2013, charter party/repair dispute (expert)
11. American Arbitration Association Proceedings between Wendella Sightseeing Company, Inc., an Illinois corporation, Claimant and Blount Boats, Inc., a Rhode Island corporation, Respondent, June 30, 2016, construction dispute (expert)

DEPOSITIONS:

1. Braithwaite vs. C.V. Scheep v. Onderneming, Civil Action No. 89-781-N, E.D. Va. – ladder failure (expert)
2. Florida Power & Light Co. vs. M/V "COSTA ROMANTICA", U.S. Southern District of Florida – maneuvering analysis (expert)
3. M/V "GOD IS LOVE", Oakwood Reinsurance vs. Avril & Sons Enterprises, Ltd., U.S. District Court for the Southern District of Florida, 95-992-CIV – fire damage repair cost (expert)

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4. Metal Processing, Inc. vs. Timothy Maxwell Humm, et al, U.S. District Court of New Jersey – capsizing, 05-1085 (WGB) (ATLANTIC TRADER) (expert)
5. United States of America vs. T/V AEGEO, et al, U.S. District Court, Southern District of New York, 96 CIV. 7643 (JSR) – technical opinion on repair of Ambrose Light Tower (expert)
6. Redden and Susan Koch vs. Hydrolines, et al, U.S. District Court, Southern District of New York, 00 CIV. 1518 – technical opinion on block heater design (2001 expert)
7. William Brogan vs. Evergreen, U.S. District Court, Civil Case No. 00 CV 6262 (JAG) – pilot ladder personal injury (2002 expert)
8. Leonard v. Transoceanic Sedco Forex, et al, Civil Action No. G-01-228, Galveston, TX, Galley Injury (2002 expert)
9. Appel v. Ted & Son’s Forked River Marina, Superior Court of New Jersey, Camden County – Travellift injury (2003 expert)
10. Tobia Marmorino v. Anthony Pravata, Sr. and Si-Tex Marine Electronics, Superior Court of New Jersey, Essex County – Diving injury (2003 expert)
11. Detyens v. Reliable Insurance, Berkeley County Court of Common Pleas, State Court of South Carolina – Drydock salvage/wreck removal (2003 expert)
12. Roane v. Greenwich Swim Committee, et al, U.S. District Court, Southern District of New York, 01 Civ. 2254 (CSH) – Personal injury (January 2004 expert)
13. Coopersmith v. Aramark. U.S. District, Southern District of New York, 00 Civ. 6552 – Drowning (March 2004 expert)
14. Boston Marine Transport, Inc. v. Bay Gulf Trading Company, Ltd and Tug CHESAPEAKE, United States District Court, Eastern District of Virginia. Trip in tow damage (May 2004 expert)
15. M/Y “SADHANA”, Langfitt v. Carver Boat Corporation, United States District Court, Northern District of Ohio, Case No. 1:04-cv-2244 – Structural Damage (August 2005 expert)
16. S/V “ZEUS”, Double Eagle Yachts, Inc. v. Independent Insurance Company Limited, et al., Circuit Court of the 11th Judicial Circuit, Miami-Dade County, Florida, Case No. 01-10003 CA (20) – Yacht Structural Damage (November 2005 fact witness)

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17. "FOUNTAIN 42", Fountain Powerboats, Inc. v. Ettore Products Co., U.S. District Court – Eastern District of NC (4:03 CV 202 H (3)) – High Speed Powerboat Structure (January 31, 2006 expert)
18. South Jersey Port Corporation v. Lexington Insurance Company, et al., U.S. District Court – District of New Jersey, Civil Action No. 02-CV-370 (SSB) – Berth Failure (June 30, 2006 expert)
19. E-Z Dock, Inc. v. Shoremaster, Inc., U.S. District Court – Western District of Missouri Southwestern Division, Civil Action No. 06-5008-CV-SW-RED – Patent case, Dock Design (May 4, 2007 expert)
20. Kyoei Fire & Marine Insurance v. MARITIME ANTALYA US District Court, Southern District 06 Civ. 2043 – Heavy Weather, (September 13, 2007 expert)
21. Louis v. Seaboard Marine, Ltd., Circuit Court of the 11th Judicial Circuit, Miami-Dade County, Florida, Case No. 05-01795 – Personal Injury, Ship Stability (October 2007 expert)
22. L. Allison Holding, Inc. v. Federal Insurance Company, Superior Court of New Jersey, Law Division – Hudson County, Docket No. HUD-L-892-06 – Engine Failure (October 2007 expert)
23. Caribbean Petroleum Refining, LP v. The JAX San Juan Bridge, etc., et al., U.S. District Court for the District of Puerto Rico, Civil No. 05-01227 (ADC) – Berth Damage (March 25, 2008 expert)
24. Richard Eggert v. Safeco Insurance Company of America, U.S. District Court, Southern District of Florida, Case No. 07-14406 CIV MOORE – Storage Damage (June 16, 2008 expert)
25. "SEI 12", The Northern Assurance Co. of America v. EIC Associates Inc. and Sterling Equipment Inc., U.S. District Court, Eastern District of New York (November 14, 2008)
26. Standard Fire Insurance Co. v. Indian Harbor Yacht Club, Inc., U.S. District Court, Southern District of Connecticut, Docket No. 08-CV-1318, Mooring Failures (expert), January 14, 2010
27. Atlas Resource Management, Inc. v. The State of North Carolina, etc., et al., State of North Carolina, New Hanover County, In The General Court of Justice, Superior Court Division, 04 CVS 1220, USS "North Carolina" Construction Dispute (expert), February 8 & 9, 2011

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28. United States of America v. Egan Marine Corporation, etc., et al. v. Exxon Mobil Corporation, et al., United States District Court for the Northern District of Illinois, Eastern Division, Civil Action No. 08cv3160, Tank Barge “EMC-423” Explosion (expert), July 7, 2011
29. Atlas Resource Management, Inc. v. The State of North Carolina, etc., et al., State of North Carolina, New Hanover County, In The General Court of Justice, Superior Court Division, 04 CVS 1220, USS “North Carolina” Construction Dispute (expert), August 25 & 26, 2011
30. Donohue v. Caputo, et al., United States District Court for the District of Connecticut, 309cv784 (PCD), M.Y. “Sunsation” Yacht Ladder Personal Injury (expert) October 4, 2011
31. N.E. Taylor Boatworks, Inc. v. The M/V Sir Winston, etc., et al., United States District Court, Middle District of Florida, Tampa Division, In Admiralty, Case No. 8:10-cv-01844-VMC-EAJ, M.V. “Sir Winston” Salvage Dispute (expert) January 11, 2012
32. Peter Schwendtner and Aniko Schwendtner a/k/a Aniko Takacs and Sandor Prem and Gizella Maria Prem vs. Ride the Ducks of Philadelphia, et al, United States District Court for the Eastern District of Pennsylvania, 2:10-cv-5007, Amphibious Truck Collision (expert), April 23, 2012
33. Bouchard Transportation Co., Inc. v. Poling and Cutler Marine Transportation LLC, et al., United States District Court for the Southern District of New York, Civil Action No. 12 CV 7152 (RA), collision repairs (expert), June 19, 2013
34. National Union Fire Insurance Company of Pittsburgh, PA a/s/o Duck Island Terminal, Inc. v. Colonial Pipeline Company, Superior Court of New Jersey, Law Division – Mercer County, Docket No. L-529-12, contaminated diesel (expert), July 30, 2013
35. Jordan v. Evergreen Marine Corporation, Superior Court of New Jersey, Law Division - Hudson County, Docket No. HUD-L-1255-13, Walkway Grating Personal Injury (expert), November 25, 2014
36. Ruvalcaba v. Yannis Karavia, LLC, et al., United States District Court for the District of New Jersey, Civil Action No. 1:13-cv-02919-RMB-KMW, fishing vessel personal injury (expert), September 22, 2015
37. Lozito v. Delaware River & Bay Authority, Superior Court of the State of Delaware, Sussex County, C.A. No. S13C-08-033 ESB, (escape chute injury) (expert), October 2, 2015
38. Parham v. Global Companies, LLC and Global Partners, LP, United States District Court, District of Connecticut, Case No. 3:12-cv-01523 (VLB), (terminal personal injury) (expert) November 25, 2015

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39. Hanover Insurance Company, et al v. Rosencrance, et al, State of Michigan in the Circuit Court for the County of Ottawa, File No. 14-3595-NZ, (marina storage fire) (expert), December 14, 2015
40. Cranmer v. Jersey Outlaw Racing Association, Superior Court of New Jersey, Law Division: Ocean County, Docket No. OCN-L-2572-13 (powerboat race capsized injury) (expert), March 10, 2016
41. Essex Insurance Company v. Schooners Bar and Grille, Inc., etc., et al., United States District Court, Southern District of West Virginia, Huntington Division, Civil Action No. 3:15-cv-15881 (sinking) (expert), August 17, 2016
42. United States of America v. M/V Bill Stile and Its 15 Uninspected Barges in Tow in rem, Campbell Transportation Company, Inc., United States District Court, Western District of Pennsylvania, Case No. 2:16-cv-00611-AJS (Hannibal Lock collision) (expert), November 29, 2016
43. Pridemore v. Hryniewicz v. Willard Marine, Inc. and Safe Boats International, LLC, Virginia: In the Circuit Court of the City of Norfolk, Case No. CL16003261-00 (capsized) (expert), February 16, 2018